

WATER QUALITY CONFIDENCE REPORT 2010

Since 1923, the City of Ventura has reliably provided clean water to our community for drinking and fire protection, and is essential to the health of our families, businesses and the environment. Our 2010 Water Quality Consumer Confidence Report includes details about where your water comes from, what it contains, and how it compares to State standards. The report also contains special health information and our efforts to identify potential contaminants and other risks to our water supply. The City of Ventura's Public Works Environmental and Water Resources Division is the responsible agency that supervises and maintains the delivery of tap water within City limits and some County areas. We welcome this opportunity to publish this important report because informed customers are our best allies to protect Ventura's precious water resources, now and in the future.

For More Information

If you would like more information regarding the City's water quality, facility improvements, or studies, please contact the Ventura Water Utility Manager's office at 652-4500. This Water Quality Confidence Report is available in Spanish and on the City's website at www.cityofventura.net.

You are also invited to express your opinions at City Council meetings held most Monday evenings in the Council Chambers at Ventura City Hall, 501 Poli Street. Please visit the City Council link at www.cityofventura.net for a complete schedule.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para más información o obtener copias del informe de agua en español llame 652-4500.

Our Water. Our Future.
Ours to Protect.

CITY OF
VENTURA
Environmental & Water Resources

Important Information on Water Quality and Safety



Lake Casitas

Ventura's Water System & Sources

In order to produce, treat and deliver safe and clean drinking water to our residents, the City of Ventura owns and operates 11 groundwater wells, three water treatment plants, two treated water connections from Lake Casitas, 23 booster pump stations, 31 water storage reservoirs, 14 pressure zones, more than 3,000 fire hydrants and 380 miles of distribution pipelines. Based on the number of facilities and assets, the California Department of Public Health (CDPH) has categorized the City's water system operations as a "5," indicating the highest degree of treatment and distribution complexity.

The City is fortunate to have **three local water sources**, each producing approximately one third of the entire water supply. One portion is from the **Ventura River at Foster Park**, pumped from four shallow wells and a subsurface collector. This water drains from a 51,000-acre lower Ventura River Watershed in the Ojai and Ventura River Valleys that includes the tributaries of the San Antonio and the Coyote Creeks. Water is also purchased from **Lake Casitas**, which is operated and treated by the Casitas Municipal Water District (CMWD). Most of this water drains from the upper watershed that is federally protected to limit contamination of the lake. Water quality in the river and the lake are similar. Water is also pumped from **deep groundwater wells** located in the City's east side near Victoria Avenue and in Saticoy. Water quality from the Santa Clara River Watershed aquifers in the Fox Canyon, Mound and Santa Paula groundwater basins is similar to the water from the Ventura River and Lake Casitas but includes about two times the total dissolved solids (TDS) or minerals (hardness).



Ventura River

Water Treatment

All of the City's water is treated to meet strict State and Federal regulations. In 2007, the Avenue Water Treatment Facility was modernized to treat water from the Ventura River with a reliable and effective process known as membrane ultrafiltration (UF). Thousands of UF hollow fiber filtration membranes provide a physical barrier to remove pathogens and particles larger than the 0.02 micron pore size, including bacteria, viruses, Giardia, and Cryptosporidium.

The groundwater sources are treated at either the Bailey or Saticoy Plants with prechlorination and direct media filtration to remove iron, manganese, and turbidity particles, and disinfected with chloramines. Additional treatment with polyphosphate is provided at each plant to help minimize the corrosion of plumbing in your home. CMWD treats the water from Lake Casitas with direct media filtration and with chloramines for disinfection prior to delivery into the City's system.

The City uses chloramines, (chemicals that contain chlorine and ammonia), for continuous disinfection of the drinking water in the distribution system. Chloramines were selected as the preferred disinfectant because of their ability to provide disinfection over a longer period of time, and improve taste and odor as compared to using chlorine alone. Chloramines have been proven to effectively kill microorganisms while producing lower levels of disinfection byproducts such as trihalomethanes (TTHMs) and haloacetic acids (HAAs), which are potentially harmful contaminants. Drinking water containing these byproducts in excess of the regulated maximum contaminant level (MCL) may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.

Although chloramines are desirable in protecting the water distribution system, their use requires additional precautions for some water uses. If a member of your household requires dialysis, you should contact your physician or dialysis service provider to assure proper

protective equipment is used during the treatment. If you use tap water for fish or other aquatic animals that use gills for breathing, you need to test and be sure the chloramines are completely removed before use. Setting water in an open container for 24 hours prior to use will not remove all chloramines in the water. Your local pet store can provide information and products for the proper removal of chloramines.

Water Quality Monitoring & Results

Ventura owns and operates a full-scale, State-certified laboratory and may also use outside State-certified labs to monitor water quality. Water quality constituents that were detected by the laboratories during 2009 are listed on the Water Quality Summary Table (see back page). As reflected, Ventura's water system did not have any violations during the reporting period and we are proud that our drinking water successfully met the State and Federal requirements.



PHOTO BY JACOB FOKO

Our operations are also designed to protect and monitor public health. All treatment and distribution water system operating staff must provide evidence of competency by passing rigorous State certification exams from the CDPH and maintain this certification through continuing education.

Treatment plants are continuously monitored for specific water constituents by special automated instrumentation to ensure that the process is always producing water of high quality. Turbidity (cloudiness of the water) is monitored to indicate the effectiveness of the filtration processes, especially for surface waters. The City and CMWD are required to measure turbidity levels every 15 minutes because high turbidity can hinder the effectiveness of the chloramines disinfectant that kills bacteria and viruses.

Water Quality Reporting

The City submits monthly and annual reports to the State for review that summarize treatment and distribution operations and drinking water quality. The State annually inspects the City's water system. An Engineering Report, prepared by the State in August 2007, found that the City's water sources, facilities, and operations are capable of producing safe and reliable water quality, which meet State and Federal drinking water standards and regulations.



In 2008, the City met the triennial lead and copper corrosion monitoring requirements by sampling 50 locations to test consumer's tap water. The tests results indicated that no additional corrosion control treatment is required and a summary is provided in the Water Quality Summary Table (see last pages).

Water System Planning & Improvements

Prepared every 10 years, a new Water System Master Plan is currently nearing completion and will include an evaluation of capacity and delivery and recommendations for capital improvements based on an analysis of water supply, distribution, and water quality. While the City has adequate supplies for the near future, additional reliability and redundancy improvements are being planned to ensure future supply, even during drought conditions. Supplemental water supply sources are also being evaluated to determine their cost effectiveness and water quality benefits.

Water pumped from groundwater wells contains higher levels of dissolved solids, minerals and sulfur than Ventura's other two sources of water. Its mineralized content results in deposits on plumbing fixtures and less aesthetically pleasing water. While treated groundwater meets all health requirements, the Draft Water Master Plan, as well as the CDPH, recommends that the City develop a Water Quality Improvement Program to lower the mineral levels in the future. As a first step, an engineering study will be completed later this year to determine the most feasible options to meet higher water quality goals and will include cost estimates for each alternative.

Current improvement projects underway include two new wells on the Eastside, Saticoy Plant renovation design, evaluation of the Ventura River Foster Park well field strategies, replacement of aging water mains throughout the City (including the Foster Hillside neighborhood and Tower Square), and installation of an emergency generator for uninterrupted operation of two critical booster pump stations. Due to our aging infrastructure and environmental regulations, we expect to continue our aggressive capital project program over the next few decades.



Significant financial investment by the community will be required to replace our systems and protect our water supply for future generations.

The City, like other water purveyors in the country, completed a federally mandated review of the security of its water system. This review evaluated all water facilities and prioritized security measures to minimize the risk of damage or contamination due to a malevolent act. As a result, the City has upgraded its security and will continue to improve the protection of our water system.

Water Health Evaluation

Identifying threats to our water quality as well as potential contaminants is important to sustaining a healthy water supply. This year, the City will conduct a five-year update to the Sanitary Survey of the Lower Ventura River Watershed to identify potential sources of water contamination. The study will also offer recommendations to reduce possible risks to the water supply and adjust the ongoing watershed water quality-monitoring program accordingly. Also, since 2002, the City has conducted an expanded testing program for specific water quality contaminants along the Ventura River and Coyote Creek, which may aid in early detection and direct planning for future improvements.

Separate Drinking Water Source Assessments are completed for all new water supplies, such as groundwater wells, to identify existing or potential threats.

No contaminants have been detected in the water supply from surrounding activities such as gas stations, agricultural drainage, dry cleaners, urban runoff, sewer systems, metal plating/finishing and repair shops.



As a water supplier, the City must evaluate its drinking water supply every three years with respect to Public Health Goals (PHG). The goals are advisory only and are not mandatory limits, but do require public notification. The last evaluation in 2007 determined that ten chemicals, although well below the maximum contaminant level limit, exceeded a State PHG or the Federal Maximum Contaminant Level Goal (MCLG). The identified contaminants were lead, copper, arsenic, uranium, gross alpha and beta particles, radium 226, bromodichloromethane, bromoform, and dichloroacetic acid. Arsenic, and the four naturally occurring radioactive isotopes that typically occur in drinking water by the erosion of natural deposits, are considered carcinogenic. Noncarcinogenic effects of uranium on the kidneys and the liver have been documented. Radium is known to cause tumors. Bromodichloromethane, bromoform, and dichloroacetic acid are formed during the disinfection process with chlorine and can increase the risk of cancer and effects on the liver, kidney and central nervous system.



Water Recovery Basins

Copper and lead can be found in water as a result of the corrosion of plumbing fixtures used in most homes. The City has conducted tests to optimize its treatment with corrosion inhibitors in an effort to further reduce copper and lead levels. High levels of copper are known to cause gastrointestinal disturbance and kidney damage. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or www.epa.gov/safewater/lead.

Potential Concerns

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Drinking water, including bottled water, may contain small amounts of some contaminants, which does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline at 1-800-426-4791.

Sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring

minerals and can pick up contaminants resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agriculture and livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals that may be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides from a variety of sources, such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- Radioactive contaminants that can be naturally occurring or be the result of oil and gas production and mining activities.

The City takes precautions to eliminate the risk of infection from microbial contaminants, including viruses, bacteria, Giardia and Cryptosporidium, from its water system. These organisms are found in surface water throughout the United States and ingesting them may cause an abdominal infection. The City has been conducting monthly sampling for possible risks in the watershed for the last two years. There was no detection of Giardia or Cryptosporidium in any of the 24 samples. The new membrane filtration improvements installed at the Avenue Treatment Plant are very effective at removing these contaminants. The media filtration used by Casitas, although good at the removal of Giardia and/or Cryptosporidium, is not considered 100% effective. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the infection within a few weeks.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Ventura’s Water Quality Summary 2010

Utilizing data collected in 2009, unless noted.
Only water quality constituents detected by laboratory testing appear in the chart.

PRIMARY STANDARDS (PDWS)	Units	Maximum Level MCL	State Goal PHG	Ventura River Average	Ventura River Range	Ground Water Average	Ground Water Range	CMWD Average	CMWD Range	Major Sources of Contamination in Drinking Water (Footnotes)
Water Clarity Treated Turbidity	NTU	TT	NA	0.04 (a)	0.02 - 0.04(a)	0.33	0.1 - 1.4	0.13 (b)	0.01-0.13 (b)	1
Radioactive Contaminants (e)										
Gross Alpha particle activity	pCi/l	15	NA	3.2	1 - 5.5	8.5	4.6 - 19.2	1.1	0.3 - 2.1	2
Radium 226	pCi/l	5	NA	0.2	ND - 0.3	0.3	0.1 - 0.4	NA	NA	2
Uranium (c)	pCi/l	20	0.5	3.3	1.6 - 4.9	4.6	3.4 - 16.8	NA	NA	2
Inorganic Contaminants										
Fluoride	ppm	2	1	0.5	0.4 - 0.6	0.51	0.41 - 0.64	0.3	0.3	4
Selenium	ppb	50	NA	ND	ND	13.5	ND - 19.7	ND	ND	5
Nitrate (as Nitrogen)	ppm	10	10	1.1	ND - 1.0	1.2	ND - 3.5	ND	ND	6
Thalium	ppb	2	0.1	1.0	1.0	1.4	1.4	ND	ND	7
Lead and Copper Samples	Units	RAL	PHG	Samples Collected		Above RAL	90th Percentile		Major Sources of Contamination in Drinking Water	
Lead	ppb	15	2	52 (d)		0	1		8	
Copper	ppb	1300	300	52 (d)		2	970		8	
PRIMARY STANDARDS for Distribution System	Units	MCL MRDL	PHG (MCLG) MRDLG	Distribution System Average		Distribution System Range		Major Sources of Contamination in Drinking Water		
Disinfection Chloramine Residual	ppm	4	4	2.2		1.0 - 3.7		Drinking water disinfectant added for treatment.		
Disinfection By Products										
Total Trihalomethanes	ppb	80	NA	31 (c)		3 - 97		By-product of drinking water chlorination.		
Total Haloacetic Acids	ppb	60	NA	25 (c)		2 - 74		By-product of drinking water chlorination.		
Microbiological Contaminant Samples										
Total Coliform Bacteria	NA	5%	0	0		0-1		Naturally present in the environment.		
Fecal Coliform Bacteria	NA	0	0	0		0		Human and animal fecal waste.		
SECONDARY STANDARDS	Units	Maximum Level MCL	Ventura River Average	Ventura River Range	Ground Water Average	Ground Water Range	CMWD Average	CMWD Range		
Aesthetic Standards										
Color	Color	15	5	ND - 5	5	ND - 5	5	5		
Odor	Threshold	3	ND	ND	ND	ND	ND	ND		
Chloride	ppm	500	50	45-61	66	58 - 77	17	17		
Corrosivity	ppb	Non corrosive (+)	0.4	0.1 - 0.7	0.3	0.1 - 0.6	- 0.1	- 0.1		
Iron (TT)	ppb		ND	ND	ND	ND	NS	NS		
Total dissolved solids	ppm		1000	722	665- 820	1241	1037 - 1528	330	330	
Specific conductance	umhos	1600	985	931 -1028	1616	1387 - 1924	548	548		
Sulfate	ppm	500	252	238 - 274	548	440 - 715	129	129		
Additional Constituents										
pH	pH units	6.5 - 8.5	7.7	7.4- 7.8	7.4	7.1 - 7.6	7.6	7.6		
Hardness	ppm	NS	391	366 - 426	554	461 - 713	212	212		
Calcium	ppm	NS	110	101 - 125	142	118 - 194	52	52		
Magnesium	ppm	NS	29	27 - 34	49	39 - 60	20	20		
Manganese (TT)	ppb	50	ND	ND - 0.1	ND	ND - 50	ND	ND		
Sodium	ppm	NS	45	42 - 47	126	97 - 177	23	23		
Phosphate	ppm	NS	ND	ND - 0.1	0.2	0.1 - 0.8	ND	ND		
Potassium	ppm	NS	2.1	2.0 - 2.3	4.7	3.9 - 5.7	3	3		
Total Alkalinity	ppm	NS	209	184 - 223	253	213 - 270	120	120		



Water Quality Terminology

The Water Quality Summary shows constituents measured in Ventura's water and reported to the State Department of Health Services, and in some cases the USEPA. Some of the terminology used is described below:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary (health related) MCLs are set as close to the Public Health Goals (PHGs) or Maximum Contaminant Level Goals (MCLGs) as is economically and technologically feasible. Secondary (aesthetically related) MCLs are set to protect the odor, taste and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to one's health. MCLGs are set by the USEPA.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to one's health. The California Environmental Protection Agency sets PHGs.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level (RAL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Footnotes

- ¹ Process and source variations.
 - ² Erosion of natural deposits.
 - ³ Erosion of natural deposits; runoff from orchards; glass and electronics production waste.
 - ⁴ Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
 - ⁵ Discharge from refineries or manufacturers; erosion of natural deposits.
 - ⁶ Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
 - ⁷ Leaching from ore-processing sites, discharge from electronics and glass factories.
 - ⁸ Internal corrosion of household plumbing systems.
- (a) Average is maximum reading. Avenue Plant Surface Filtration (TT) = 95% of samples equal or below 0.1 NTU.
 - (b) Average is maximum reading. CMWD Direct Filtration (TT) = 100% of samples equal or below 0.2 NTU
 - (c) Highest running average cannot exceed the MCL.
 - (d) Samples were taken at selected households on a first draw in August 2008.
 - (e) Monitoring completed in 2007 and 2008.

Legend

ppm: Parts per million or milligrams per liter.

ppb: Parts per billion or micrograms per liter.

pCi/l: Picocuries per liter, a measure of radioactivity in water.

CMWD: Casitas Municipal Water District

TT: A required process intended to reduce the level of contaminant in drinking water

NA: Not applicable

ND: Not detectable

NS: No standard

NTU: Turbidity, a measure of the clarity or cloudiness of the water.



Victoria Well No. 2